REECE
COLLECTION
1881

EDWARD FORD

2836

No. 13.] [July, 1881.

THE

Australian Health Society,

MELBOURNE.

SMALL-POX & VACCINATION.

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(Chevalier of the Legion of Honour).

Only those who have been eye-witnesses of small-pox as it occurs in countries where vaccination is not enforced can have any idea of the loathsomeness and terrible fatality of that disease, or can form any just estimate of the boon conferred upon humanity by Jenner's great discovery. Up to the end of the last century small-pox was always amongst us, but at tolerably regular intervals, like a great wave, it swept over the populations of Europe, carrying off its victims by the thousand, and leaving behind it the ineffaceable records of its progress.

In those days out of every one hundred persons who contracted the disease from thirty to forty or more died, and the majority of those who survived the ordeal bore with them for the rest of their lives the marks of the struggle through which they had passed.

At the present time, of one hundred efficiently vaccinated persons who are attacked by small-pox, only five or six die, and a majority of the remainder have a mild attack of the disease, and escape without being marked.

LONDON SCHOOL OF HYGIENE AND
24 MAR 1953

Vaccination, discovered by Dr. Jenner towards the end of the last century *(Inquiry into the Causes and Effects of the Variolæ Vaccinicæ*, published in 1798), has worked this wondrous change. It may be defined as the process by which vaccinia, or cow-pox, is introduced into the human system, with the object of protecting it from an attack of small-pox. Vaccinia manifests itself in the teats and udder of the cow in the form of round vesicles, containing a clear fluid, called lymph. It was recognised that persons engaged in milking frequently contracted this disease (a very mild one) and that they seldom took small-pox. Jenner, taking this as his starting point, made a series of experiments, extending over many years. With the point of a lancet he introduced some of this lymph under the skin of human beings, and found that a vesicle similar to the one from which he had taken it resulted. With lymph from this secondary vesicle he vaccinated others, and found that the results were still the same.

In time he ceased taking matter direct from the cow, and continued his vaccinations with humanised lymph. So palpable were the results produced by his great discovery that before his death vaccination was being practised in every civilised country in the world.

The advantages of efficient vaccination are :—

First. In a large majority of cases it confers complete protection from small-pox.

Second. The minority who are still susceptible to the influence of the disease take it in so mild a form that they are seldom marked, and more seldom die of it.

Third. It has materially diminished the epidemic influence of small-pox.

Does the vaccine virus deteriorate in transmission through human bodies ? In other words, is vaccine lymph transmitted through an unbroken chain of human beings as effectual in the protection it confers as lymph taken direct from the cow ? On this point there is some difference of opinion amongst medical authorities, and quite recently some strong evidence has been brought forward in favour of the view that vaccine lymph transmitted through a series of generations of human beings does not confer such complete protection as lymph taken direct from the cow.

Infancy, between the second and sixth months, is for many reasons the most favourable period of life for the successful performance of vaccination, although it may be safely done immediately after birth, or in extreme old age. The lymph employed should be clear, and free from admixture with blood and other impurities; and four perfect vesicles, at least, should be produced, because the protective power of the vaccination seems to correspond in some degree with the number and perfection of the resulting marks. I need scarcely say that when the vesicles are in process of formation, the greatest care must be taken that their growth be not interfered with by the rubbing of the clothes or otherwise, and the crusts or scales which subsequently form should be allowed to drop off, and should not be forcibly removed, as is sometimes done.

A few even of those who have been efficiently vaccinated will, if exposed to contagion, contract small-pox. This fact has led to the practice of re-vaccination, and experience confirms its utility.

The question is, under what circumstances should it be performed?

When an infant has been unsuccessfully vaccinated—*i.e.*, where no scar is visible, or only irregular or indistinct scars exist—it should be done without delay. Where one well-defined mark is left the operation may be deferred until near puberty, at which time all should be re-vaccinated. After this period it is advisable, though probably in a large number of cases not necessary, to have it repeated every five or seven years, and during the prevalence of an epidemic all who are exposed to contagion, except children who possess two or more perfect marks, should be submitted to the operation.

Is it possible to communicate through the vaccine virus other diseases, such as skin affections, cancer, syphilis, scrofula?

Mr. Marson, who performed over 50,000 vaccinations, says:—"I have never seen other diseases so communicated." And the large experience of Dr. West, Sir W. Jenner, and Sir James Paget, led them to a similar conclusion.

In France and Germany, Cullerier, Taupin, Heim, and others, made a series of experiments to determine the question. They took lymph from diseased children, and used it in the vaccination of healthy ones, but in no case did they succeed in propagating anything except vaccinia. Alleged cases, and even epidemics, of such transmissions of disease have been from time to time brought forward, but in none of them has the evidence been sufficiently clear to warrant us in accepting them as proved.

Diseases may have been propagated through careless vaccination —*i.e.*, vaccinating from a sore that was not a true vaccine vesicle, or from using lymph contaminated with blood or other impurities—but until other and more conclusive evidence is brought forward, we may safely rest in the belief that cow-pox, and cow-pox only, is transmitted in carefully and efficiently performed vaccination.

OBJECTS OF THE AUSTRALIAN HEALTH SOCIETY.

1. To create an educated public opinion with regard to sanitary matters in general, by the aid of the platform, the press, and other suitable means.
2. To induce and assist people by personal influence, example, and encouragement, to live in accordance with recognised laws whereby health is maintained and disease prevented.
3. To seek the removal of all noxious influences deleterious to the public health, and to influence and facilitate legislation in that direction.

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Mason, Firth & M'Cutcheon, Printers, Melbourne.